

Original Article

Transforming Rural Development through Digital and Financial Inclusion: Insights from Pratapgarh District, Uttar Pradesh

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Manuscript ID: **Abstract**

JRD -2026-180408

ISSN: 2230-9578

Volume 18

Issue 4

Pp. 63-73

April- 2026

Submitted: 15 Mar. 2026

Revised: 25 Mar. 2026

Accepted: 10 Apr. 2026

Published: 30 April. 2026

Rural India continues to confront enduring structural impediments to poverty alleviation, inadequate infrastructure, and restricted access to essential services, all of which hinder economic participation and social mobility. These challenges are exacerbated by limited engagement with formal financial systems and inconsistent digital connectivity, which perpetuate cycles of exclusion. National initiatives, such as Digital India and Pradhan Mantri Jan Dhan Yojana (PMJDY), have expanded financial access and accelerated digital penetration; however, significant disparities persist across regions. The Pratapgarh district in Uttar Pradesh exemplifies these developmental contradictions, characterized by a high dependence on agriculture, low literacy levels, and an uneven distribution of financial institutions, particularly among marginalized communities. This study examines the role of digital and financial inclusion in shaping rural development outcomes in Pratapgarh, focusing on mobile banking, the Unified Payments Interface (UPI), the Aadhaar-enabled Payment System (AePS), and micro-ATM services. Utilizing a mixed- methods approach, including household surveys, qualitative interviews, and GIS-based spatial analysis, this study investigates the extent of digital financial adoption, its impact on livelihoods, and the socio-spatial variations influencing access and utilization. The study also explores stakeholders' perspectives and identifies key constraints faced by rural households, such as digital illiteracy, connectivity gaps, gendered access to technology, and trust deficits on digital platforms. The findings underscore that while digital tools have significantly improved access to formal finance and public services, their developmental impact remains uneven, shaped by localized socioeconomic and infrastructural realities. By highlighting these micro-level dynamics, this study contributes critical insights for targeted policy interventions aimed at strengthening digital ecosystems, enhancing financial empowerment, and advancing inclusive rural development in districts such as Pratapgarh.

Keywords- Rural Development, Digital Financial Inclusion, Technological Development, Financial Literacy, Spatial Disparities, Pratapgarh

Introduction

Rural India, which constitutes approximately 65% of the nation's population, has historically encountered systemic barriers that impede economic participation and overall development (Chintakula, 2020). The rural economy continues to contend with a complex array of challenges, including persistent poverty, inadequate infrastructure, socio-economic disparities, and limited access to essential services (Patel, 2024). Among the most significant obstacles are restricted access to formal financial systems, insufficient digital infrastructure, and low literacy levels, all of which perpetuate cycles of poverty and social exclusion (Zhang, 2025). In this context, rural development and financial inclusion emerge as interdependent pillars essential for achieving holistic socio-economic transformation in developing economies (Erlando et al., 2020). Financial inclusion refers to the provision of affordable and accessible banking and financial services to disadvantaged and low-income groups, empowering them to participate more fully in economic activities (Saranya & Priyadharshini, 2025). Conversely, rural development encompasses the economic advancement of rural populations and their broader social transformation.



Quick Response Code:



Website:

<https://jrdrvb.org/>

DOI:

10.5281/zenodo.20352391



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How to cite this article:

Meenakshi. (2026). Transforming Rural Development through Digital and Financial Inclusion: Insights from Pratapgarh District, Uttar Pradesh. *Journal of Research & Development*, 18(4), 63–73. <https://doi.org/10.5281/zenodo.20352391>

Its primary objective is to enhance the living standards of rural communities through the effective utilization of locally available natural and human resources of rural areas (Kapur, 2019). Globally, the lack of financial inclusion remains a pressing issue. According to the World Bank Global Findex Database (2021), approximately 29% of adults in developing countries do not have a savings account. Similarly, a 2016 report by the McKinsey Global Institute revealed that approximately two billion individuals in emerging economies remain unbanked, while nearly 200 million small enterprises continue to face difficulties in obtaining the capital necessary for growth (Demirgüç- Kunt et al., 2022). In India, where nearly two-thirds of the population resides in rural areas, these challenges persist, reflecting deep-rooted disparities in access to financial services across diverse geographic and socio-economic contexts (Munjal, 2025).

For several decades, rural households in India have primarily depended on informal financial mechanisms (Jones, 2008), including moneylenders, chit funds, family networks, and community- based savings groups to fulfill their financial requirements (Mukherjee, 2013). Although these informal systems provide accessibility and flexibility in the absence of formal institutions, they often involve significant disadvantages, such as exorbitant interest rates, exploitative lending practices, and limited opportunities for asset accumulation and upward economic mobility (Jones, 2008). The introduction of digital financial tools, accelerated by national initiatives such as Digital India and Pradhan Mantri Jan Dhan Yojana (PMJDY), has fundamentally transformed the financial landscape in rural areas. Digital inclusion, which encompasses access to mobile connectivity, Internet services, and digital literacy, has the potential to bridge the rural-urban divide by more effectively integrating rural communities into the digital economy (Ms et al., 2014). Enhanced digital access allows individuals to obtain information, education, healthcare, and government services, fostering empowerment and social inclusion. Recent data from the Reserve Bank of India (RBI) underscore this growing accessibility (Arun & Kamath, 2015). The RBI's Financial Inclusion Index (FI-Index), which ranges from 0 (complete exclusion) to 100 (full inclusion), increased from 64.2 in March 2024 to 67.0 in March 2025, reflecting measurable progress in the penetration of financial services (Rahman & Mehnaz, 2024). Government initiatives, such as PMJDY, launched in 2014, in conjunction with the expanding reach of mobile phones and Internet connectivity, have created a conducive environment for the growth of financial technology in previously underserved regions. Notably, PMJDY has succeeded in bringing formal banking access to nearly 80% of rural households, while the adoption of the Unified Payments Interface (UPI) has reached 38% in semi-urban and rural areas, facilitating seamless digital transactions (Shankhpal, 2025). Evidence from the Aligarh district demonstrates that UPI usage correlates with an 18% increase in household consumption, driven by diversified remittance channels (Haque et al., 2025). Complementing these advances, the implementation of the Aadhaar-Enabled Payment System (AePS) has further accelerated digital penetration by simplifying and securing access to financial services for rural populations (Field & Pande, 2018). In rural India, technological advances are increasingly bridging gaps in financial access and driving rural development (Chakravarty & Pal, 2013). Pratapgarh District in Uttar Pradesh exemplifies these broader challenges, with a predominantly rural population of over 3.2 million— 85% of whom live in approximately 1,900 villages across 17 development blocks, according to the 2011 Census. The district's socioeconomic profile is marked by heavy reliance on agriculture, low literacy rates, and limited penetration of formal financial institutions, which exacerbate persistent poverty and vulnerability among rural households, especially marginalized groups such as women and smallholder farmers (Chaurasia et al., 2025).

In this context, integrating digital tools such as Unified Payments Interface (UPI), micro-ATMs, and Aadhaar-enabled Payment System (AePS) with financial services offers a vital pathway to enhance livelihoods, improve access to essential resources, and promote inclusive growth. However, despite national policy momentum and the rapid expansion of these tools, even in remote areas, rural districts like Pratapgarh face persistent disparities in digital infrastructure, banking density, gendered access to technology, and awareness of financial services. Local governance and policy frameworks further play a pivotal role in either facilitating or impeding these processes. However, despite a growing body of research on digital and financial inclusion, significant gaps remain in understanding their dynamics and outcomes at the district scale. National-level analyses provide overarching insights but overlook the unique socio-economic, cultural, and infrastructural nuances of regions like Pratapgarh. Key underexplored areas include the interplay of digital literacy, gender disparities, and financial empowerment in shaping rural development. This study examines the reach and effects of technological innovations aimed at enhancing financial inclusion in this region, the degree to which rural households have embraced digital financial services, and the geographical variations influencing access and utilization. By employing a mixed-methods approach that combines quantitative surveys, qualitative interviews, and GIS-based spatial analysis, this study offers a comprehensive insight into the interplay between technology, financial inclusion, and rural development. Furthermore, the research addresses the barriers and difficulties that rural communities encounter in adopting digital financial services, including digital illiteracy, inadequate infrastructure, and trust issues. By illuminating these micro-level processes, the research contributes to targeted planning that transcends policy pronouncements and infrastructure investments. Ultimately, it emphasizes the necessity of grounding rural transformation in lived realities, rigorous implementation, and a commitment to dismantling structural inequalities, thereby fostering equitable development across India's rural landscapes.

Review Of Literature

Financial inclusion, which refers to making banking services affordable and accessible to disadvantaged groups (Saranya & Priyadharshini, 2025), is globally acknowledged as crucial for reducing poverty and promoting economic empowerment. In development studies, financial inclusion is viewed not just as the presence of banking infrastructure but as a means to enhance capabilities, decrease vulnerability, and enable socio-economic participation among marginalized communities, a view heavily influenced by Amartya Sen's capability approach (1999). According to the World Bank Global Findex Database, approximately 29% of adults in developing nations do not have savings accounts, and McKinsey Global Institute reports that nearly two billion people in emerging economies are unbanked (Demirgüç-Kunt et al., 2022). These figures highlight the significant challenge of financial exclusion, necessitating urgent policy actions. Consequently, many households rely on informal systems such as moneylenders, rotating savings groups, and family based lending networks, which, despite being accessible, often impose high interest rates and restrict asset accumulation opportunities (Collins et al., 2009). In India, these issues are especially severe in rural areas, where geographic spread, low bank density, and socioeconomic disadvantages hinder formal financial participation. The historical reliance on informal finance is well documented (Jones, 2008; Mukherjee, 2013), perpetuating cycles of debt and vulnerability. National programs such as Digital India and Pradhan Mantri Jan Dhan Yojana have increased basic banking access through zero-balance accounts, direct benefit transfers, and mobile services, whereas technological platforms such as the Unified Payments Interface and Aadhaar Enabled Payment System have reduced transaction costs and enabled smooth digital transactions. Research indicates that these tools improve financial behavior, enhance remittance efficiency, and boost household consumption and small business activities, thereby strengthening rural livelihoods (Field & Pande, 2018; Chakravarty & Pal, 2013). However, ongoing digital divides due to poor Internet connectivity, low digital literacy, gender disparities in mobile device access, and trust issues continue to hinder effective adoption, particularly among marginalized groups (Arun & Kamath, 2015). Recent evaluations by the Reserve Bank of India through its Financial Inclusion Index show gradual improvements in service reach; however, significant regional disparities persist, highlighting uneven progress. Bridging these gaps is crucial for crafting targeted interventions that go beyond infrastructure provision to achieve meaningful empowerment and sustainable rural transformation.

Objectives

The objectives of the present study are as follows:

- To evaluate the availability, spatial distribution, and accessibility of formal banking infrastructure and services in the study area.
- To evaluate the penetration and impact of technological solutions designed to improve financial inclusion in the study area.
- To investigate the contribution of community-based institutions, particularly Self-Help Groups (SHGs), in facilitating digital and financial inclusion.
- To identify the barriers to Financial Inclusion.
- To evaluate the stakeholders' perspective.

Study Area

Pratapgarh district is strategically located in the eastern Gangetic plains of Uttar Pradesh, positioned between 25°34' to 26°11' north latitude and 81°18' to 82°27' east longitude, covering an area of approximately 3,730 km². It is bounded on the north by the district Sultanpur, on the south by the district Allahabad, on the east by the district Jaunpur, and on the west by Fatehpur and north-west by the district Rae Bareilly (Figure 1). In the south-west, the Ganga forms the boundary of the district for about 50 km. separating it from Fatehpur and Allahabad, and in the extreme north-east, the Gomati forms the boundary for about 6 km. Administratively, the district comprises 17 community development blocks (CD blocks): Babaganj, Vihar, Kalakankar, Rampur Sangramgarh, Sangipur, Laxmanpur, Mandhata, Sandwachandrika, Aspurdeosara, Baba Belkhar Nath Dham, Mangrora, Shivgarh, Gaura, Sadar, Patti, Kunda, and Lalganj. Its administrative headquarters is located in Pratapgarh city. For this study, seven blocks- Sadar, Baba Belkhar Nath Dham, Laxmanpur, Patti, Vihar, Kunda, and Lalganj were purposively selected to capture topographic and accessibility variations. According to the 2011 Census, the district's population stands at 3.2 million, with approximately 88% residing in rural areas, rendering it predominantly agrarian. The district is characterized by alluvial soils, flat topography, and a sub-humid climate, with hot summers and cool winters. The average annual precipitation ranges from 950 to 1,000 mm and predominantly occurs during the southwest monsoon. Major rivers, including the Ganga, Sai, Bakulahi, and Gomti, traverse the district and significantly influence agricultural practices and settlement patterns. The fertility of the soil and the availability of water position agriculture as the primary source of livelihood; however, the district is susceptible to seasonal flooding in low-lying areas and to water scarcity during extended dry periods. Pratapgarh is designated as a backward district under the Government of India's Backward Regions Grant Fund (BRGF), which is indicative of its structural development challenges.

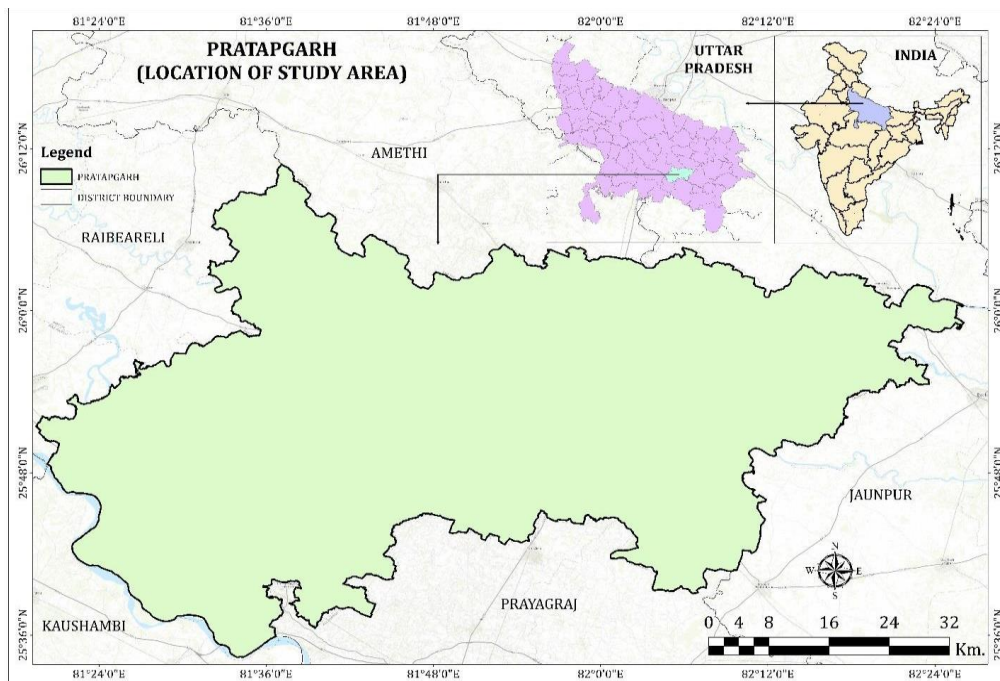


Figure 1. Locational Map of the Study Area

Agriculture employs over 60% of the workforce, with small and marginal farmers predominantly owning the land used for agriculture. A comprehensive understanding of the unique geographic, demographic, and socio-economic contexts of the Pratapgarh District is crucial for evaluating the impact and potential of digital and financial inclusion initiatives. This study area serves as a backdrop for examining the transformative processes of rural development, highlighting both the opportunities and constraints inherent in the region.

Research Methodology

1.1 Research Design

This research utilizes a mixed-methods approach, combining both quantitative and qualitative methodologies to thoroughly investigate the connection between technological advancement, rural progress, and financial inclusion in Pratapgarh District. The study integrates cross-sectional survey data with spatial analysis, enhanced by qualitative insights gathered from focus group discussions and interviews with key informants. Figure 1 illustrates the study's detailed framework.

1.2 Sampling Framework

Given the district's geographical diversity and administrative structure, a stratified random sampling approach was adopted to ensure representativeness across different blocks. The study was conducted across six development blocks in Pratapgarh District, selected to represent diverse geographical, economic, and infrastructural conditions.

Primary Data- A total of 300 households were surveyed across 7 blocks. For the qualitative component, 30 in-depth interviews were conducted with banking officials and SHG (Self-Help Group) members. Structured questionnaires were administered to selected households through face-to-face interviews. The questionnaire was developed and pre-tested with 30 households in a village not included in the main sample. Based on feedback and pilot results, the instrument was refined for clarity. Data collection was conducted over four months from July 2025 to November 2025. The questionnaire comprised sections addressing:

Digital access (smartphone, internet, UPI use, digital literacy)

Financial inclusion (bank account ownership, insurance, credit access, digital payments)

Livelihood activities

Access to government services.

Secondary Data- Census 2011 data, RBI reports, PMJDY statistics, NABARD financial inclusion reports, and district statistical handbook.

Ethical Considerations:

Informed consent was obtained from all participants prior to data collection. The objectives of the study, the voluntary nature of participation, and the measures undertaken to ensure confidentiality were clearly communicated to each respondent. Particular attention was paid to the inclusion and protection of vulnerable groups, including women, older adults, and individuals from marginalized communities. No personally identifiable information was collected, and all

data were fully anonymized during processing and analysis. Interviews were conducted at times and locations convenient for participants, with due regard for cultural norms and sensitivities throughout the data collection process.

FINDINGS AND RESULTS

1.3 Profile of the Respondents

The household survey included 300 respondents across 7 blocks in Pratapgarh District. The demographic profile reveals a predominantly young population, with 42% of household heads below 40 years of age. Male household heads comprised 78% of the sample, reflecting traditional household structures. Educational attainment was relatively low, with 31% of respondents having no formal education, 38% having completed primary education, 22% having completed secondary education, and only 9% having education beyond secondary level. The caste composition of the sample reflected the district's demographics: 28% Scheduled Castes, 3% Scheduled Tribes, 52% Other Backward Classes, and 17% general category households (Figure 2). Agriculture was the primary occupation for 67% of households, with the remainder engaged in agricultural labor, small business, service employment, or a combination of activities.

1.4 Banking Infrastructure and Accessibility

As of 2024, Pratapgarh district is home to various banking institutions, including public sector banks such as the State Bank of India, Punjab National Bank, Bank of India, and Union Bank of India. Additionally, there are regional rural banks like Uttar Pradesh Gramin Bank and non-nationalized (private sector) banks, including HDFC Bank, ICICI Bank, Kotak Mahindra Bank, and AXIS Bank. The district boasts over 230 bank branches; however, their distribution is uneven across the region. ATM availability has improved significantly, with over 105 ATMs currently operational within the district. Despite this progress, the concentration of ATMs in urban centers and block headquarters has left many rural areas without easily accessible cash withdrawal facilities.

The analysis of banking infrastructure in Pratapgarh district shows notable geographic disparities in the availability and access to formal financial services across theselected blocks (Table 1 and 2).

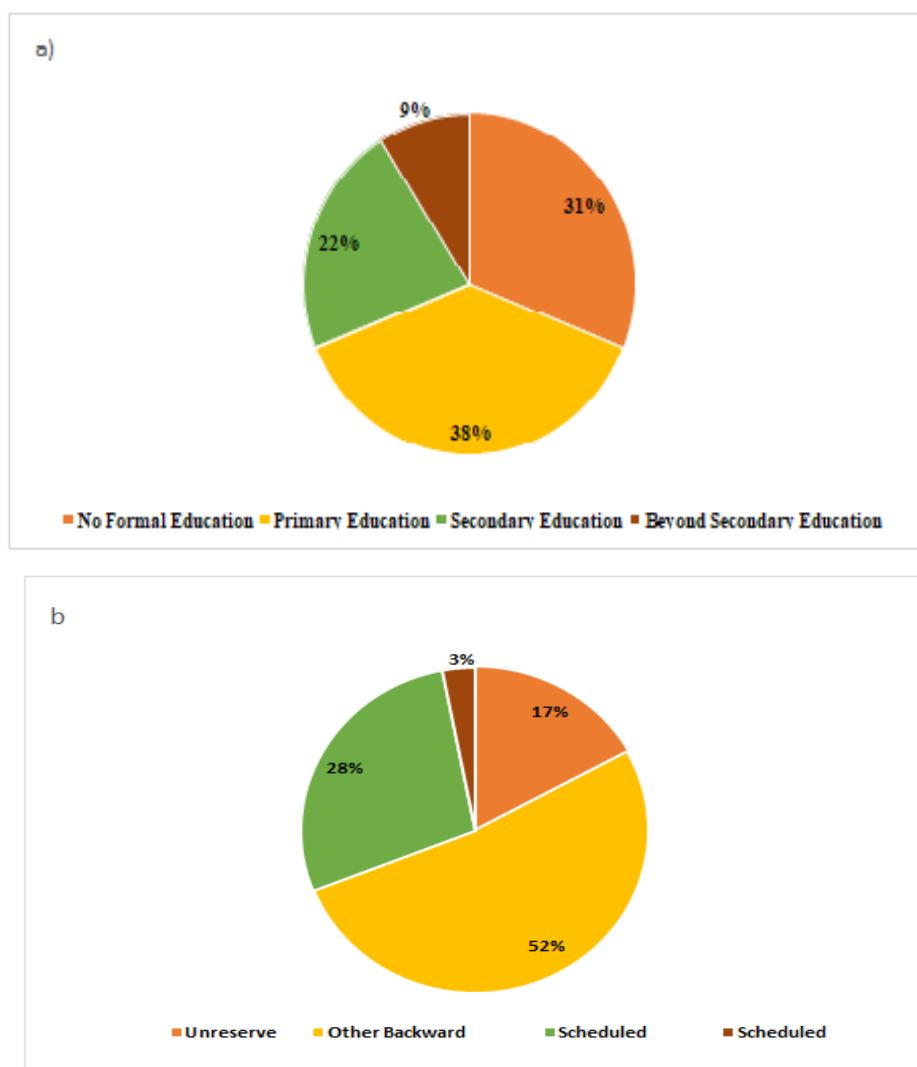


Figure 2. Profile of the Respondents a) Educational Qualification b) Caste Composition

Table 1. Distribution of Financial Institutions and Services across CD Blocks of Pratapgarh District

Sl. No.	Name of CD Block	National Banks			Regional Rural Banks			Other Non-Nationalised Banks		
		Branches	Kiosk & CSC	ATMs	Branches	Kiosk & CSC	ATMs	Branches	Kiosk & CSC	ATMs
1.	Lalganj	7	223	6	3	13	0	2	12	2
2.	Laxmanpur	5	147	3	6	21	0	2	3	1
3.	Kunda	4	143	3	4	15	0	2	17	2
4.	Vihar	3	62	2	5	19	0	2	5	1
5.	Sadar	4	496	11	10	34	1	2	67	2
6.	Patti	4	140	4	3	13	0	2	12	1
7.	Baba Belkhar Nath	3	84	2	4	15	0	2	7	1

CSC= Customer Service Centre

Source: District Gazetteer, 2024

Table 2. Distribution of Agricultural Credit Societies in Pratapgarh District

Sl. No.	Name of CD Block	Agricultural credit societies
1.	Lalganj	8
2.	Laxmanpur	9
3.	Kunda	11
4.	Vihar	11
5.	Sadar	9
6.	Patti	7
7.	Baba Belkhar Nath	10

Source: District Gazetteer, 2024

Sadar Block has the highest banking density, indicating better financial access, followed by Lalganj (0.94) and Laxmanpur (0.82). In contrast, Kunda (0.40) and Vihar (0.48) exhibit the lowest densities, reflecting comparatively limited banking infrastructure and accessibility in these areas (Table 3).

Table 3. Banking Density across CD Blocks of Pratapgarh District

Sl. No.	Name of CD Block	Total Population	Bank Branches per 10,000 Population
1.	Lalganj	127084	0.94
2.	Laxmanpur	158259	0.82
3.	Kunda	249225	0.40
4.	Vihar	208374	0.47
5.	Sadar	136207	1.17
6.	Patti	125227	0.71
7.	Baba Belkhar Nath	161933	0.55

1.5 Usage Patterns and Active Accounts

While account ownership is high, the actual usage patterns tell a different story. Among households with bank accounts, only 41% reported making deposits or withdrawals at least once a month. The primary use of these accounts is receiving government benefits and subsidies through Direct Benefit Transfers (DBT), with 89% of account holders citing this as their main use. Only 28% utilize their accounts for regular savings, and a mere 12% have ever accessed formal credit through their accounts. The analysis uncovered significant dormancy issues. When account activity is defined as at least one customer-initiated transaction (excluding automatic DBT credits) in the past three months, 47% of accounts were classified as dormant. This dormancy was particularly pronounced among Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts opened during the initial campaign period. This suggests that while account opening was successful, sustaining engagement with these accounts remains a challenge.

1.6 Penetration of Digital Financial Services

Mobile phone ownership in the surveyed households was widespread but not universal. Eighty- seven percent of households owned at least one mobile phone, with an average of 1.4 phones per household. However, smartphone

ownership was considerably lower at 52% of households. Among households with mobile phones, 68% were in the name of male members, reflecting gender disparities in technology access. Internet access remained a significant challenge. Only 38% of households reported having regular internet access, primarily through mobile data. The quality of internet connectivity was a frequent complaint, with respondents citing poor network coverage, slow speeds, and intermittent service. Many villages experienced complete network outages during adverse weather conditions.

Digital literacy levels were low even among smartphone owners. Only 29% of respondents reported feeling confident in using smartphone applications beyond basic calling and messaging. In Pratapgarh district, approximately 52% of the surveyed rural households reported using mobile banking or digital payment platforms. This level of adoption is notably higher than the national rural average of about 50% for formal digital access, yet it remains below the urban benchmark for Uttar Pradesh, where usage rates exceed 75%. The expansion of digital financial services in Pratapgarh has been significantly influenced by large-scale initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY). As of mid-2022, Uttar Pradesh had more than 7.53 crore PMJDY accounts with cumulative deposits surpassing ₹33,000 crore, and continued growth is anticipated through 2025, trends that are also reflected in the district's rising levels of financial inclusion. Age was a strong determinant of digital literacy, with younger respondents (under 35) significantly more likely to be digitally literate than older respondents.

Table 4. Comparative Metrics of Digital Financial Services Penetration Across Selected Blocks in Pratapgarh District (Based on Primary Survey)

Sl. No.	Name of CD Block	Mobile Banking Adoption (%)	AePS Usage (%)	UPI Transactions/Month (Avg.)
1.	Lalganj	65	45	18
2.	Laxmanpur	59	41	15
3.	Kunda	48	30	9
4.	Vihar	42	24	7
5.	Sadar	69	55	22
6.	Patti	60	57	17
7.	Baba Belkhar Nath	40	21	6

Table 4 highlights clear spatial variations in digital and financial inclusion across the blocks of Pratapgarh district. Pratapgarh Sadar, Lalganj, and Patti consistently exhibit the highest levels of mobile banking adoption, AePS usage, and UPI transactions, reflecting better connectivity, higher digital literacy, and stronger penetration of banking correspondents and digital service points. Blocks such as Laxmanpur and Kunda show moderate adoption, suggesting an ongoing but uneven diffusion of digital financial practices. In contrast, Vihar and Baba Belkhar Nath record the lowest values across all indicators, indicating persistent digital gaps linked to weaker infrastructure, limited smartphone ownership, and lower awareness of digital financial platforms.

1.7 Self-Help Group (SHG) Integration with Digital Platforms

The integration of Self-Help Groups (SHGs) with digital platforms has steadily expanded across Pratapgarh, transforming how women manage their savings, credit, and micro-enterprise activities. Among surveyed households, 33.9% of women reported SHG membership. In several blocks, particularly Patti, Lalganj, and Pratapgarh Sadar, SHGs have begun utilizing mobile applications to maintain digital records of meetings, savings contributions, and internal lending. This shift has reduced errors and improved transparency. Many groups are now conducting monthly transactions through UPI and Aadhaar-enabled Payment Systems (AePS), enabling members to deposit savings or repay loans without the need to travel long distances to bank branches. Digital orientation sessions organized under the National Rural Livelihoods Mission (NRLM) and facilitated by Community Resource Persons have boosted the confidence of first-time smartphone users in using mobile banking and digital payments. However, in blocks such as Kunda, Vihar, and Baba Belkhar Nath, digital integration remains limited due to poor connectivity, low smartphone ownership, and hesitance among older women. Despite these challenges, the increasing adoption of digital tools among SHGs in Pratapgarh is enhancing financial discipline, improving access to credit, and gradually empowering women to engage more actively in formal financial and market systems. Survey data indicate that SHG members access credit more frequently than non-members. 59.7% of SHG members obtained loans in the past three years compared to 40.3% of non-members. Typical SHG loans range from ₹10,000 to ₹50,000.

1.8 Mobile Banking and UPI Adoption

The usage of digital payment systems was in early stages in rural Pratapgarh. The proportion varies substantially by demographic characteristics (Figure 3). Among all surveyed households, 34% reported having used digital payments at least once, but only 16% used them regularly (at least once per month). UPI-based payments were the most common form of digital transaction, primarily for recharging mobile phones and paying for utility services. Mobile banking applications were used by only 19% of account holders, primarily for checking account balances and viewing transaction history. The usage of mobile banking for actual transactions was minimal, with most users preferring to visit ATMs or bank branches for withdrawals. Older respondents and those with lower education levels were particularly hesitant to use mobile banking, citing complexity and fear of making errors. Focus group discussions revealed that while awareness of digital payment options had increased, actual adoption required not just awareness but hands-on demonstration,

repeated practice, and ready availability of support when problems arose. Several participants mentioned learning about digital payments from younger family members or shopkeepers, suggesting the importance of informal learning networks.

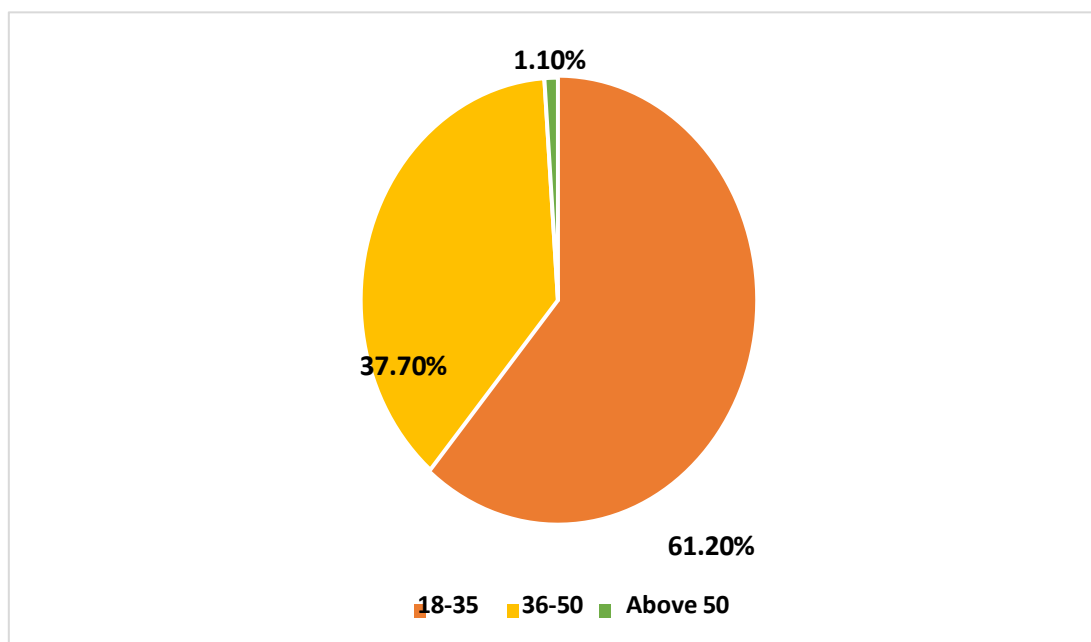


Figure 3. Percentage of Users of UPI and Mobile Banking by Age Group

1.9 Access to Credit and Formal Lending

Access to formal credit remained limited despite high bank account ownership. Only 18% of surveyed households had obtained a loan from a formal financial institution in the past five years. Among those who obtained credit, 62% accessed agricultural loans through Kisan Credit Cards (KCC), while others obtained loans for business, education, or emergency needs. The majority of households (71%) still relied primarily on informal credit sources including moneylenders, relatives, and local traders. The preference for informal credit was driven by several factors: faster access without extensive documentation, flexibility in repayment schedules, and established relationships with lenders. However, informal credit came at significantly higher costs, with interest rates ranging from 24% to 60% per annum compared to 7-12% for formal bank loans.

Barriers to accessing formal credit included lack of collateral (cited by 44% of respondents), complex documentation requirements (39%), corruption and demands for bribes (23%), and previous loan rejections (18%). Many agricultural households mentioned that the loan amounts sanctioned under KCC were insufficient for their actual needs, forcing them to supplement with informal credit.

1.10 Direct Benefit Transfer (DBT) and Government Schemes

The Direct Benefit Transfer (DBT) mechanism has emerged as the most salient embodiment of financial inclusion among the surveyed households in Pratapgarh district. Notably, 83% of respondents reported receiving at least one governmental entitlement via DBT, encompassing key programs such as ration subsidies under the Public Distribution System, liquefied petroleum gas subsidies through the Ujjwala Yojana, agricultural income support via the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), and pension disbursements.

Perceptions of DBT were predominantly favorable, with beneficiaries highlighting its contributions to mitigating corruption, ensuring prompt delivery of entitlements, and obviating the need for intermediaries. Notwithstanding these advantages, substantive implementation hurdles were evident. Authentication discrepancies at service delivery points, predominantly linked to Aadhaar-enabled biometric verification, afflicted 42% of DBT recipients. Such lapses were frequently ascribed to suboptimal fingerprint legibility prevalent among agrarian laborers' intermittent network connectivity, and malfunctions in verification hardware. Further, delays in the disbursement of DBT payments were a recurring concern. Although the system is designed to facilitate instantaneous fund transfers, beneficiaries often reported waiting several weeks between the announcement of benefits and the actual crediting of funds. Even after receipt, cash liquidity constraints at local Business Correspondent (BC) outlets occasionally prolonged withdrawals, particularly when BCs lacked adequate cash reserves. The mandatory Aadhaar-bank account linkage also posed difficulties for a subset of households. Despite extensive government outreach efforts, 11% of surveyed households reported problems related to data mismatches between Aadhaar and bank records, such as discrepancies in names or personal details. Rectifying these inconsistencies often required multiple visits to banks or Aadhaar enrollment centers, imposing significant transaction costs and time burdens on rural residents.

1.1 Barriers to Financial Inclusion

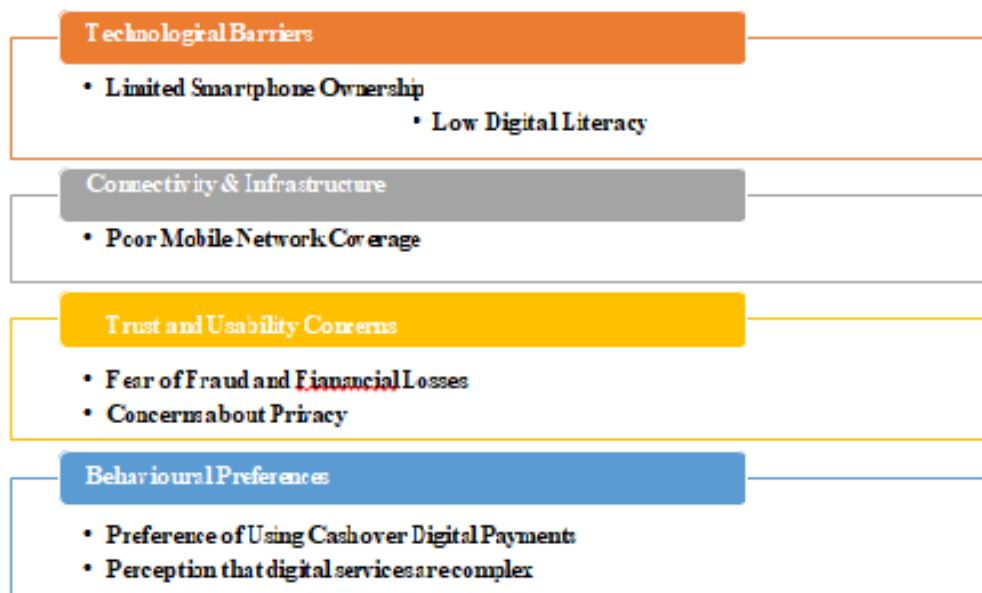


Figure 4. Barriers to Financial Inclusion

The study identified multiple interrelated barriers operating at different levels (Figure 4). At the infrastructural level, inadequate banking presence in villages, poor quality of BC services, unreliable internet connectivity, and frequent ATM breakdowns created physical barriers to access. At the institutional level, complex documentation requirements, language barriers in bank communications, hostile or indifferent behavior from bank staff, and opaque procedures created psychological and procedural barriers. Many respondents recounted experiences of being turned away from banks for incomplete paperwork or made to wait for hours without clear information. At the individual and household level, low financial literacy, unfamiliarity with technology, preference for cash and informal systems, and gender-based restrictions limited engagement with formal financial services. Trust deficits also played a role. Historical experiences with bank failures, stories of fraud, and skepticism about financial institutions' reliability influenced attitudes. The complexity of financial products and fine print in agreements that most respondents could not read or understand reinforced this distrust.

1.12 Stakeholders' Perspective

The qualitative component of this study gathered diverse perspectives from various stakeholders involved in the financial inclusion ecosystem, highlighting significant gaps in the experiences and priorities of different actors. Bank managers across the seven blocks expressed satisfaction with their ability to meet account-opening targets under the Pradhan Mantri Jan Dhan Yojana (PMJDY), viewing the scheme as a successful mass mobilization effort. However, they identified staff shortages, especially in rural and semi-urban branches as a major constraint in delivering quality customer service and conducting financial literacy programs. Additionally, the managers expressed frustration over the challenges of simultaneously implementing multiple government schemes. They often faced inadequate preparation time and resources, which diverted their attention from core banking activities and building customer relationships. Banking correspondents, who serve as the critical last-mile link between financial institutions and rural customers, provided sobering accounts of their operational challenges. The BCs interviewed across villages in Lalganj, Bihari, and Baba Belkhar Nath Dham blocks consistently highlighted inadequate compensation as a primary concern, with commission structures that made it economically unviable to serve remote villages where transaction volumes were low. Self-help group leaders, particularly women who had gained financial literacy and confidence through SHG participation, provided valuable insights into what enables successful financial inclusion among marginalized groups. SHG leaders emphasized the importance of peer support, hands-on learning, and sustained handholding rather than one-time training sessions. The gap between policy intentions and ground-level implementation emerges not from any single failure but from systemic issues including misaligned incentives, inadequate resources, insufficient capacity building, and limited feedback mechanisms that would allow bottom-up learning to inform top-down policy.

DISCUSSION

The findings of this study clearly demonstrate that digital and financial inclusion have become central determinants of rural development outcomes in Pratapgarh district. The spatial variations observed across blocks are consistent with broader evidence from rural India showing that digital adoption is strongly shaped by infrastructure availability, socio-economic status, and institutional reach (Hunter et al., 2025). The near-universal bank account

coverage achieved through PMJDY represents a significant administrative accomplishment, aligning with national trends where over 460 million accounts have been opened since 2014 (Government of India, 2023). However, the high dormancy rate and limited usage beyond DBT receipts suggest that account ownership alone is an inadequate metric for financial inclusion. This finding aligns with Demirgüç-Kunt et al. (2022), who differentiate between formal inclusion, which refers to having an account, and effective inclusion, which entails actively using financial services for economic improvement. The persistent last-mile challenges illustrate that technological solutions are insufficient without addressing ground-level implementation realities, with banking correspondents becoming bottlenecks due to inadequate compensation, limited training, technological failures, and insufficient liquidity issues, as Singh and Naik (2019) identified across multiple Indian states as stemming from misaligned incentives and inadequate institutional support.

The study reinforces that financial inclusion cannot be understood apart from existing social inequalities, with gender-based disparities in account control, digital access, and financial literacy reflecting broader patterns of patriarchy in rural India. These findings corroborate Kumari et al.'s (2025) research, demonstrating that while financial inclusion initiatives have increased women's access to bank accounts, control over financial resources often remains with male household members due to persistent cultural norms and mobility restrictions. The quality of internet connectivity emerged as a significant constraint, with poor network coverage and intermittent service representing critical barriers to technology-driven development that Prahalad (2005) identified in low-income contexts. The intersectionality of caste, class, gender, and education creates compounding disadvantages for the most marginalized groups, and while account ownership showed no stark caste-based disparities, qualitative evidence revealed that SC/ST households faced greater difficulties accessing credit and navigating banking bureaucracy patterns consistent with Ghosh et al.'s (2017) analysis of persistent social hierarchies in financial service delivery. Overall, the findings suggest that financial inclusion in Pratapgarh, while achieving impressive quantitative coverage, requires fundamental rethinking to move from passive account ownership to active financial engagement, from technology-driven solutions to hybrid human-technology models, and from gender-neutral interventions to explicitly gender-responsive and socially inclusive approaches that address the structural inequalities perpetuating exclusion.

POLICY RECOMMENDATIONS

Based on the research findings and analysis, the following policy measures are recommended:

Government programs should shift performance measurement from account opening to active usage and meaningful financial engagement.

Government should strengthen Last-Mile Infrastructure.

Improvement of mobile network coverage and internet connectivity in rural areas under Bharat Net and other programs should be prioritized.

Financial Literacy Programs should be redesigned. Introduction of fast-track approval mechanisms for small-value agricultural and micro-enterprise loans to support livelihood diversification and entrepreneurship.

Programs specifically aimed at enhancing women's financial autonomy should be designed and implemented.

Financial inclusion programs should be linked with skill development, entrepreneurship support, market linkages, and employment generation initiatives.

CONCLUSION

This study of digital and financial inclusion in rural Pratapgarh District reveals a landscape of significant progress alongside persistent challenges. Banking infrastructure has expanded, with all seven surveyed blocks having bank branches, though village-level access remains limited. Bank account penetration is high, driven primarily by PMJDY and DBT requirements. Mobile phone ownership is widespread, though smartphone ownership and internet access remain limited. Financial literacy levels are low, demonstrating adequate understanding of basic financial concepts. Access to formal credit remains limited, with most households still dependent on expensive informal credit. Insurance and social security coverage are modest and underutilized. Significant gender gaps persist in account control, digital access, and financial literacy. Women's participation in SHGs shows positive association with financial empowerment. Socioeconomic factors including education, income, and proximity to bank branches significantly predict financial inclusion outcomes. Last-mile service delivery through banking correspondents faces operational challenges. DBT implementation, while generally positive, experiences authentication failures and liquidity issues. Trust deficits, cultural preferences, and institutional barriers continue to limit engagement with formal financial systems. Strengthening digital infrastructure, promoting digital

financial literacy, and ensuring equitable access will be critical for building inclusive and resilient rural communities.

LIMITATIONS

The study, while comprehensive, has a few limitations. It relies on cross-sectional household data, which limits the ability to capture seasonal or long-term changes in digital and financial behaviour. The digital inclusion indicators used focus mainly on quantifiable measures and may not fully reflect qualitative aspects such as digital confidence or trust. Block-level findings are based on sampled villages and may not represent all intra-block variations, especially in larger blocks. Network constraints and respondent recall may also influence the accuracy of reported digital transactions. Lastly, the study primarily captures community-level perspectives, with limited inputs from higher-level policymakers and private digital service providers.

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